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Docket Number (Optional)
02560035BB
Applicant(s)
T. Rappaport, et al.

Filing Date
Concurrently
Application Number
not assigned
Group Art Unit
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#### U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE
AS	1	4,675,147	6-23-87	Schaefer et al.			4-6-83
	2	4,736,453	4-5-88	Schloemer			12-10-85
	3	4,885,694	12-5-89	Pray et al.			4-29-87
	4	5,111,392	5-5-92	Malin			6-9-89
	5	5,119,307	6-2-92	Blaha et al.		· · · · · · · · · · · · · · · · · · ·	12-22-89
	6	5,239,487	8-24-93	Horejsi et al.			10-24-90
	7	5,293,640	3-8-94	Gunmar et al.			
	8	5,307,261	4-26-94	Maki et al.			6-28-91
	9	5,337,149	8-9-94	Kozah et al.			11-12-92
$\Psi$	10	5,339,184	8-16-94	Tang			6-15-92
AS	11	5,375,123	12-20-94	Andersson et al.			2-5-93

#### FOREIGN PATENT DOCUMENTS

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Docket Number (Optional) Application Number 02560035BB not assigned Applicant(s) T. Rappaport, et al. Filing Date Group Art Unit concurrently not assigned

#### **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	REV	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE  IF APPROPRIATE
AS	12	5,394,522	2-28-95	Sanchez-Frank et al.			9-13-93
	13	5,450,615	9-12-95	Fortune et al.			12-22-93
	14	5,458,123	10-17-95	Unger			4-29-94
	15	5,465,390	11-7-95	Cohen			2-12-93
	16	5,482,050	1-9-96	Smokoff et al.		·	2-17-94
	17	5,485,568	1-16-96	Venable et al.			10-8-93
	18	5,491,644	2-13-96	Pickering et al.			9-7-93
	19	5,491,837	2-13-96	Haartsen			3-7-94
	20	5,493,679	2-20-96	Virgil et al.			10-29-93
V	21	5,515,269	5-7-96	Willis et al.			11-8-93
AS	22	5,528,518	6-18-96	Bradshaw et al.			10-25-94

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLA55	SUBCLASS	Frans	ilation
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#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

T. Rappaport, et. al.

Serial No.: (not yet assigned) Group Art Unit: not yet assigned

(Divisional application of 09/633,120)

Filed: Concurrently

Examiner not yet assigned

For: Improved Method and System for a Building Database Manipulator

Commissioner of Patents P.O. Box 1450 Alexandria 22313-1450

#### INFORMATION DISCLOSURE STATEMENT

Sir:

Under the provisions of 37 C.F.R. 1.97 through 1.99 and pursuant to applicant's duty of disclosure under 37 C.F.R. 1.56, applicants respectfully bring the following documents, listed on the attached form PTO-1449, to the attention of the Examiner in charge of the above-identified application. The references cited in the attached PTO-1449 are readily available to the Examiner in copending parent U.S. application Serial No: 09/633,120. Thus, according to the rules of practice, these references are not provided herein, but are listed on the PTO-1449 form and should be considered by the Examiner. If the Examiner is unable to obtain the listed references, applicant will gladly provide such references upon notification by the Examiner in charge of the examination of the above-identified application.

These citations do not constitute an admission that the references are relevant or material to the claims. They are only cited as constituting related art of which the applicant is aware.

It is respectfully requested that the listed references be considered by the Examiner and formally made of record in this application.

Please charge any deficiencies in fees and credit any overpayment of fees to attorney's Deposit Account No. 50-2041.

Respectfully submitted,

Michael E. Whitham Registration No.: 32,635

Date: 3/26/04/
Whitham, Curtis & Christofferson, PC 11491 Sunset Hills Road - #340
Reston, VA 20190
703/787-94000

Please associate this Application with Customer No. 30743

#### Application Number Docket Number (Optional) 102560035BB not assigned INFORMATION DISCLOSURE CITATION Applicant(s) T. Rappaport, et al. (Use several sheets if necessary) Group Art Unit Filing Date not assigned concurrently **U.S. PATENT DOCUMENTS** FILING DATE EXAMINER NAME . SUBCLASS DATE DOCUMENT NUMBER REF IF APPROPRIATE INITIAL 7-25-94 Lamming et al. 7-23-96 AS 5,539,665 23 Gattey et al. 6-20-94 9-3-96 5,553,312 24 5-2-95 Snider et al. 9-10-96 25. 5,553,620 3-23-93 9-10-96 Strasnick et al. 26 5.555,354 Markus 10-1-96 27 5,561,841 7-30-93 Want et al. 5,564,070 10-8-96 28 2-28-95 Menich et al. 1-14-97 29 5,594,946 10-21-93 Liron 1-28-97 5,598,532 30 12-23-94 4-29-97 Krause et al. 5,625,827 31 8-22-91 6-3-97 Lewis 5,636,344 32 7-1-96 AS Okubo et al. 11-18-97 5,689,355 33 FOREIGN PATENT DOCUMENTS Franciation CLASS SUBCLASS COUNTRY 377.0 REF DOCUMENT NUMBER (Including Author, Title, Date, Pertinent Pages, Etc.) OTHER DOCUMENTS DATE CONSIDERED EXAMINER /Akash Saxena/ (12/26/2006) EXAMINER: Initial If citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and

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#### Docket Number (Ontional) Application Number :02560035BB not assigned INFORMATION DISCLOSURE CITATION Applicant(s) T. Rappaport, et al. (Use several sheets if necessary) Filing Date Group Art Unit concurrently not assigned **U.S. PATENT DOCUMENTS** FILING DATE EXAMINER NAME CLASS SUBCLASS. DATE DOCUMENT NUMBER INITIAL IF APPROPRIATE 5-8-97 · AS 6-2-98 Urbish et al. 5,761,093 34 9-20-95 8-11-98 Brockel et al. JS 5,794,128 6-27-96 8-25-98 Kuriyan **3**6 5,799,154 6-7-95 Cooper et al 8-15-98 5,809,282 Hart et al. 6-29-95 9-29-98 5,815,395 38 3-31-95 10-27-98 Tang et al. 5,828,960 39 2-23-96 11-3-98 Tonelli et al. 5,831,610 40 4-3-96 11-3-98 Dent 5,832,389 41 12-5-95 1-19-99 Butler et al. 42 5,861,887 5-14-91 Kost 5,867,112 2-2-99 43 4-7-97 Colwell 3-2-99 AS 44 5,877,777 FOREIGN PATENT DOCUMENTS Translation COUNTRY CLASS SUBCLASS DOCUMENT NUMBER DATE REF YES NO OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER /Akash Saxena/ (12/26/2006) DATE CONSIDERED

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Docket Number (Optional) Application Number 02560035BB not assigned Applicant(s)
T. Rappaport, et al. Group Art Unit Filing Date . not assigned concurrently

#### U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE  IF APPROPRIATE
AS	45	5,878,328	3-2-99	Chawla et al.			12-21-95
	46	5,907,850	5-25-99	Krause et al.			1-21-97
	47	5,917,808	6-29-99	Kosbab			1-17-97
	48	5,923,850	7-13-99	Barroux			6-28-96
	49	5,926,762	7-20-99	Arpee et al.			5-17-96
	50	5,940,196	8-17-99	Piehler et al.			5-16-97
	51	5,945,976	8-31-99	Iwamura et al.			12-10-96
	52	5,948,055	9-7-99	Pulsipher et al.			8-29-96
	53	5,949,335	9-7-99	Maynard			4-14-98
$\bigvee$	34	5,949,988	9-7-99	Feisullin et al.			4-3-97
AS	55	5.953,669	9-14-99	Stratis et al.			12-11-97

#### FOREIGN PATENT DOCUMENTS.

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Docket Number (Optional) 02560035BB	Application Number not assigned
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EXAMINER INITIAL	RET	DOCUMENT NUMBER	DATE	NAME	CLASS	. SUBCLASS	FILING	DATE
AS	56	5,963,867	10-5-99	Reynolds et al.	<del></del>	-	IF APPRI	PRIATE
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	57	3,270,400	10-19-99	Komara	· · · · · · · · · · · · · · · · · · ·		12-31-9	6
	58	5,987,328	11-16-99	Ephremides et al.			4-24-97	
	59'	6,006,021	12-21-99	Tognazzini			7-1-96	
	60	6,018,625	1-25-00	Hayhall et al.			8-27-97	<del></del>
	61	6,021,316	2-1-00	Heiska et al.				
	62	6,032,105	2-29-00	Lee et al.			7-31-97	
	ស	6,038,547	3-14-00	Casto			1-7-98	
	64	6,044,273	3-28-00	Tekinay			12-10-90	5
$\Psi$	65	6,058,102	5-2-00	Drysdale et al			11-6-98	
AS	66	6,058,262	5-2-00	Kawas et al.		·	4-18-97	
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AS	67	6,059,842	.5-9-00	Dumarot et al.	٠.		4-14-98
	68	6,061,722	5-9-00	Lipa et al.			12-23-96
	69	6,075,541	6-13-00	Maclinovsky			11-7-97
	70	6,088,522	7-11-00	Lee et al.			7-31-97
	71	6,104,699	8-15-00	Holender et al.			·
	72	6,108,309	8-22-00	Cohoe et al.			12-8-97
	73	6,111,857	8-29-00	Soliman et al.			9-11-97
. ,	74	6,122,083	9-19-00	Ohta et al.		·	10-3-94
	75	6,148,010	11-14-00	Sutton et al.			6-24-98
$\sqrt{}$	76	6,199,032	3-6-01	Anderson			7-22-98
AS	77	6,204,813	3-20-01	Wadell et al.			2-20-98

#### FOREIGN PATENT DOCUMENTS

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EXAMINE INITIAL		REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING D	
AS		78	6,208,833	3-27-01	Preschutti et al.			6-24-97	
	П	79	6,229,540	5-8-01	Tonelli et al.			10-13-98	<del></del>
1		80	6,253,086	6-26-01	Parantainen et al.			3-25-99	
		81	6,285,377	9-4-01	Greenbaum et al.			6-26-97	
		82	6,289,203	9-11-01.	Smith et al.			2-25-98	· · · · ·
		83	6,317,599	11-13-01	Rappaport et al.	<del>,</del>	·	5-26-99	
	1	84	6,326,987	12-4-01	Alexander			12-19-00	
		85	6,330,005	12-11-01	Tonelli et al.			10-6-99	
		86	6,311,144	10-30-01	Abu El Ata			7-31-98	
<b>V</b>	7	87	6,337,688	1-8-02	Berstis			1-29-99	
AS	,	88	6,338,031	1-8-02	Lee et al.			9-23-99	
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Applicant(s)

T. Rappaport, et al.

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#### U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	PILING DATE  IF APPROPRIATE
AS	89	6,356,758	3-12-02	Almeida et al.			12-31-97
	90	6,393,432	5-21-02	Flansburg et al,			6-2-99
	91	6,408,312	6-18-02	Forthman et al.			8-30-99
	92	6,442,507	8-27-02	Skidmore et al.			12-29-98
	93	6,470,195	10-22-02	Meyer			10-31-00
	94	6,487,417	11-26-02	Rossoni et al.			11-24-99
	95	6,493,679	12-10-02	Rappaport et al.			5-26-99
	96	6,496,290	12-17-02	Lee			12-17-98
	97	6,499,006	12-24-02	Rappaport et al.			7-14-99
$\overline{\mathbf{V}}$	98	6,505,045	1-7-03	Hills et al.			4-10-00
AS	99	5,586,254	12-17-96	Kondo			

#### FOREIGN PATENT DOCUMENTS

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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/Akash Saxena/ (12/26/2006)

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#### Docket Number (Optional) Application Number 02560035BB not assigned INFORMATION DISCLOSURE CITATION Applicant(s) T. Rappaport, et al. (Use several sheets if necessary) Filing Date Group Art Unit concurrently. not assigned U.S. PATENT DOCUMENTS EXAMINER RIT DOCUMENT NUMBER FILDIG DATE. DATE NAME SUBCLASS CLASS INTILAL IF APPROPRIATE 6,085,335 7-4-00 Djoko et al. AS 100 12-31-97 5,710,758 1-20-98 Soliman et al. 101 9-29-95 Tonelli et al. 102 5,821,937 10-13-98 8-12-96 103 5,774,669 6-30-98 George et al 7-28-95 104 5,802,146 9-1-98 Dulman 11-22-95 5,825,759 Liu . 10-20-98 7-24-95 Berman 5-1-96 5,845,124 12-1-98 106 109 6,199,032 3-6-01 Anderson 7-22-98 10-6-94 110 Stone et al. 5,467,441 11-14-95 ılı 6,243,772 Ghori et al. 1-31-97 6-5-01 Stancil et al. 112 5,994,984 11-30-99 5-29-98 FOREIGN PATENT DOCUMENTS Translation REF DOCUMENT NUMBER DATE COUNTRY CLASS SUBCLASS YES NO **OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.) **EXAMINER** DATE CONSIDERED /Akash Saxena/ (12/26/2006) EXAMINER: Initial If citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and

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Docket Number (Optional) Application Number 02560035BB not assigned Applicant(s)
T. Rappaport, et al. Filing Date Group Art Unit concurrently

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examiner Initial	REF	DOCUMENT NUMBER	DATE	NAME	. CLASS	SUBCLASS	FILING DATE.  IF APPROPRIATE
AS	113	5,977,851	11-2-99	Stancil et al.			11-13-97
AS	114-	5,755,072	5-26-98	Lingafelter			5-13-98
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#### FOREIGN PATENT DOCUMENTS

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**EXAMINER** 

/Akash Saxena/ (12/26/2006)

**DATE CONSIDERED** 

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	945 A.S.		Docket Number (Optional)	Application Number
IN	FORM	AATION DISCLOSURE CITATION (Use several sheets if necessary)	Applicant(s)	not assigned
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	<del></del>		concurrently	not assigned
*EXAMINER INITIAL		OTHER DOCUMENTS (Including Author, Title		
	1	P. Bahl, V. Padmanabhan, and A. Balachandran, Lessons, "Microsoft Technical Report, April 2000	"A Software System for Locating Mo	bile Users: Design, Evaluation, and
		G. Durgin, N. Rappaport, H. Xu. Measurements	and Modele for Padio Dak I	
	2	G. Durgin, AS. Rappaport, H. Xu, Measurements Homes and Trees at 5.85 GHz," IEEE Transaction	s on Communications, vol. 46, no. 11,	November 1998.
	<del> </del>	C.M. Peter Ho et al., "Amenna Effects on Indoor	Obstructed Wireless Channels and a	
	3	C.M. Peter Ho et al., "Amenna Effects on Indoor Wide-Band Propagation Model for In-Building Pe Information Networks, Vol. 1, No. 1, 1994.	rsonal Communications Systems," In	pererministic Image-Based Ernational Journal of Wireless
<del></del>	<del> </del> -	S. Kim et al., "Radio Propagation Measurements a Environments at 908 MHZ and 1.9 GH2," IEEE T	and Predictions Using Three dimension	nal Ray Tracing in Urban
	4	Environments at 908 MHZ and 1.9 GHZ, LEEK T	ransactions on Vehicular Technology	vol. 48, no. 3, May 1999
,	<u> </u>	T.S., Rappaport et al., "Use of Topographic Maps Satellite Coverage for Radio Detection and Tracking MPRG-TR-95-14 Virginia Tech. Sentember 1995	with Building Information to Determ	inc Antenna Placements and GPS
•	5	MPRG-TR-95-14, Virginia Tech, September 1995	ng to Urban Environments," MPRG	Cechnical Report
	 	R.K. Morrow, Jr. and T.S. Rappaport, "Getting In	," Vircless Review Magazine, March	2000.
	6			
·		Wireless Valley Communications, Inc., "Six Planne pp.5-148 to 5-156, 1999.	er 3.16 for Windows 95/94/NT User's	Manual," Software User's Manual
•	7			•
		M. Panjwani et al., "Interactive Computation of Co Environments," IEEE Journal on Selected Areas in	overage Regions for Wireless Commo	gication in Multifluored Indoor
· . ·	8	1222 State of Selected Areas in	Сопинаниемнову, УОЛ. 14, 150. 3, Ар.	11396.
		L Piazzi and H.L. Bertoni, "Achievable Acurracy o Trunsuctions on Jehicular Technology, vol. 48, no.	Site-Specific Path-Loss Predictions	in Residential Enviroments" IEEE
	9	7	5, truly 1999.	
		T.S. Rappaport et al., "Wireless Communications: Magazine, May 2002.	Past Events and a Future Perspective	", IEEE Communications
	10		*	
		F.S. Rappaport et al., "Radio Propagation Predicti Embedded Wireless Microsystems," ARPA Annual 1994.	on Techniques and Computer-Aided Report, MPRG Technical Report M	Channeling Modeling for PRG-TR-94-12, Virginia Tech. Jul
	11 .			
	12	T.S., Rappaport et al., "Use of Topographic Maps Detection and Tracking in Urban Environments," I 1995	with Building Information to Determ MPRG Technical Report MPRC-TR-	ine Antenna Placements for Radio 95-14,Virginia Tech, November
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EXAMINER		* Not Considered as hardcop in the file wrapper	BATE CONSIDERED DINITED A	nd/or absent
EXAMINER: Int not considered. I	tial if cl	itation considered, whether or not citation is in conformanc	e with MPEP Section 609; Draw line thro	igh citation if not in conformance and

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Patent and Trademark Office \* U.S. DEPARTMENT OF COMMERCE

		AATION DISCLOSURE CITATION (Use several sheets if necessary)	Applicant(s) T. Rappaport, et al.  Filing Date  Concurrently  Group Art Unit  not assigned
'EXAMINER INITIAL		OTHER DOCUMENTS (Including Author, 1	8
avitues	<del>  -</del>		ings: A Statistical Scattering Approach," IEEE Transactions on Vehicula
	13	100 mingy, vot. 40, 110, 3, 1928 1999.	
		T.S. Rappa oprt, "wireless Communications: P	rinciples and Practice" Second Edition, Prentice Hall, 2002.
,	14		
	15		ps with Building Information to Determine Antenna Placements and GPS king in Urban Environments," MPRG Technical Report MPRG-TR-95-1
		T.S. Rappaport et al., "Indoor Path Loss Measu produced for Motorola, December 16, 1997	rement for Humes and Apartments at 2.4 and 5.85 GHz," private report
· ·	16		
		T.S. Rappaport, "Isolating Interference," Virele	ess Review Magazine, May 2000
	17		, , , , , , , , , , , , , , , , , , ,
	ļ !	Slides from T.S. Rappaport and R. Skidmore, "I Wireless Solutions Conference and Exposition, F	ntroduction to In-Building Wireless Systems, " Infocust In-Building ebruary 4, 2003.
	118		
· · · · · · · · · · · · · · · · · · ·	18		
· · · · <u>-</u>	19	S. Sandhu, M.P. Koushik, and T.S. Rappaport "Fon Site Specific Propagation Prediction," MPRO	Predicted Path Loss for Roslyn VA, First set of predictions for ORD Project Technical Report MPRG-TR-94-20, Virginia Tech. December 1994.
		1	
		1	
	19	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction	Predicted Path Loss for Roslyn VA, First set of predictions for ORD Project Technical Report MPRG-TR-94-20, Virginia Tech. December 1994.  Dredicted Path Loss for Roslyn VA, First set of predictions for ORD MPRG Technical Report MPRG-TR-94-20. Virginia Tech. March 1995.
	19	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction	
	20	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction"  S. Seidel et al., "Site-Specific Propagation Predictions on Vehicular Technologs, Vol. 43, 5	Predicted Path Loss for Roslyn VA, First set of predictions for ORD MPRG Technical Report MPRG-TR-94-20. Virginia Tech. March 1995 (Section for Wireless In-Building Personal Communication Design, 18.EE) No. 4, November 1994.
	20	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction"  S. Seidel et al., "Site-Specific Propagation Predictions on Vehicular Technologs, Vol. 43, 5	Predicted Path Loss for Roslyn VA, First set of predictions for ORD MPRG Technical Report MPRG-TR-94-20. Virginia Tech. March 1995 stion for Wireless In-Building Personal Communication Design," IEEE No. 4, November 1994.
	20	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction"  S. Seidel et al., "Site-Specific Propagation Predictions on Vehicular Technologs, Vol. 43, 5	Predicted Path Loss for Roslyn VA, First set of predictions for ORD MPRG Technical Report MPRG-TR-94-20. Virginia Tech. March 1995 of the Prediction for Wireless In-Building Personal Communication Design," IEEE No. 4, November 1994.
	20	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction."  S. Seidel et al., "Site-Specific Propagation Prediction Transactions on Vehicular Technology, Vol. 43, 7  S. Shakkottai and T.S. Rappaport, "Research Clefifth International Symposium on Wireles Perso	Predicted Path Loss for Roslyn VA. First set of predictions for ORD MPRG Technical Report MPRG-TR-94-20. Virginia Tech. March 1995 ction for Wireless In-Building Personal Communication Design," IEEE No. 4, November 1994.  hallenges in Wireless Networks: A Technical Overview," Proceeding of the Inal Multimedia Communications, flogolulu, 41, October 2002.
	20	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction."  S. Seidel et al., "Site-Specific Propagation Prediction Transactions on Vehicular Technology, Vol. 43, 7  S. Shakkottai and T.S. Rappaport, "Research Clefifth International Symposium on Wireles Perso	Predicted Path Loss for Roslyn VA, First set of predictions for ORD MPRG Technical Report MPRG-TR-94-20. Virginia Tech. March 1995 stion for Wireless In-Building Personal Communication Design," IEEE No. 4, November 1994.
	20 21 22	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction."  S. Seidel et al., "Site-Specific Propagation Prediction Transactions on Vehicular Technolog," Vol. 43, is S. Shakkottai and T.S. Rappaport, "Research C. Fifth International Symposium on Wireles Personal Communication of The Com	Predicted Path Loss for Roslyn VA. First set of predictions for ORD MPRG Technical Report MPRG-TR-94-20. Virginia Tech. March 1995 (Stion for Wireless In-Building Personal Communication Design," IEEE No. 4, November 1994.  hallenges in Wireless Networks: A Technical Overview," Proceeding of the Inal Multimedia Communications, Honolulu, HI, October 2002.
	20 21 22	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction."  S. Seidel et al., "Site-Specific Propagation Prediction on Vehicular Technology, Vol. 43, in Transactions on Vehicular Technology, Vol. 43, in Transaction of Telegraphy on Vehicular Technology, Vol. 43, in Transaction of Telegraphy on Vehicular Technology, Vol. 43, in Transaction of Telegraphy on Vehicular Technology, Vol. 43, in Transaction on Vehicular Technology, Vol. 43, in Transaction on Vehicular Technology, Vol. 43, in Transaction on Vehicular Technology, Vol. 43, in Transactions on Vehi	Predicted Path Loss for Roslyn VA, First set of predictions for ORD MPRG Technical Report MPRG-UR-94-20. Virginia Tech. March 1995 etion for Wireless In-Building Personal Communication Design," IEEE No. 4, November 1994.  hallenges in Wireless Networks: A Technical Overview," Proceeding of the Multimedia Communications, Honolulu, VII, October 2002.  **Communications of Micro-cellular Radio Communication System Design," ons, Vol. Vol. 14, No. 3, pp. 662-673, May 1996.
AMINER	20 21 22 23	S. Sandhu, M.P. Koushik, and T.S. Rappaport, "Project on Site Specific Propagation Prediction."  S. Seidel et al., "Site-Specific Propagation Prediction on Vehicular Technology, Vol. 43, in Transactions on Vehicular Technology, Vol. 43, in Transaction of Telegraphy on Vehicular Technology, Vol. 43, in Transaction of Telegraphy on Vehicular Technology, Vol. 43, in Transaction of Telegraphy on Vehicular Technology, Vol. 43, in Transaction on Vehicular Technology, Vol. 43, in Transaction on Vehicular Technology, Vol. 43, in Transaction on Vehicular Technology, Vol. 43, in Transactions on Vehi	Predicted Path Loss for Roslyn VA, First set of predictions for ORD MPRG Technical Report MPRG-TR-94-20. Virginia Tech. March 1995 etion for Wireless In-Building Personal Communication Design," IEEE No. 4, November 1994.  hallenges in Wireless Networks: A Technical Overview," Proceeding of the nall Multimedia Communications, Honolulu, 41, October 2002.  4.  ransmitters for Micro-cellular Radio Communication System Design," ons, Vol. Vol. 14, No. 3, pp. 662-673, May 1996.  Ing and Microcellular Wireless Communication System Design Tool" The PRG-TR-97-13, June 1997.  Dy Virginia Tech for 2 years after submission.

Form PTO-A820 (also form PTO-1449)

			Docket Number (Optional) Application Number 02560035BB not assigned
IN!	FORM	ATION DISCLOSURE CITATION (Use several sheets if necessary)	Applicant(s) T. Rappaport, et al.
			Filing Date Group Art Unit  concurrently not assigned
*EXAMINER		OTHER DOCUMENTS (Including Author, 1	8
INÎTIAL		Company Web Page "Actix" www.actix.com p	
		Company Web Page " Agilent' www.agilent.com	
		Company Web Page Agilent " www.agilent.co	
		Company Web Page " Comarco" www.edx.com	
. •		Company Web Page " ComOpt" www. comopt.	
		Company Web Page " Lucent" www.bell-labs.co	om product name: WiSB
		Company Web Page " Eriesson" www.eriesson.	com product teme: TEMS Lite
		Company Web Page " Ericsson" www.ericsson.	
····		Company Web Page " Marconi" www.marconi.	
		Company Web Page " Marconi, www.marconi.	÷.
		Company Web Page "Schema"www.schema.co	
		Company Web Page " ScoreBoard" www.score	board.com product name: ScoreBoard
XAMINER W	ebpa o ha	ge archive dates not prese rdcopy presented with cite	n date considered relevance
YAMINED. I.	141-1 15-1	tation considered, whether or not citation is in conform	At Manna

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SHEET 14 OF 17

## Docket Number (Optional) Application Numbe 02560<u>03</u>5BB not assigned INFORMATION DISCLOSURE CITATION Applicant(s) (Use several sheets if necessary) T. Rappaport, et al. Filing Date .. Group Art Unit concurrently not assigned \*EXAMINER OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) INITIAL Skidmore, et al., Russell Senate Office Building Propagation Study, Project Report for Joseph R. Loring & Associates, Project Update, "AoC Contract # Acbr96088, prepared for Office of the Architect of the Capital, January 19, 1997. R. Skidmore, et al., Russell Senate Office Building Propagation Study, Project Report for diseph R. Loring & Associates; "Assessment and Study of the Proposed Enhancements of the Wireless Communications Environment of the Russell Senate Office Building (RSOB) and Associated Stillity Tunnels," AoC Contract # Acts 5088, prepared for Office of the Architect of the Capitol, February 20, 1997. R. Torres et al., "CINDOOR: An Engineering Tool for Planning and Design of Wireless Systems in Enclosed Spaces," IEEE Antennas and Propagation Magazine, Vol. 41. No. 4 August 1990 26 R. Skidmore et al., "Interactive Coverage Region and System Design Simulation for Wireless Sommunication Systems in Multi-Floored Indoor Environments: SMT Plus tm, "IEEE ICUPC Proceedings, 1996. 27 T.S. Rappaport et al., "Radio Propagation Prediction Techniques and Computer Arded CHannel Modeling for Embedded Wireless Microsystems," MPRG Tech. MPRG-TR-95-08, Virginia Tech, July 1995. 1. Article titled: Building Database Manipulator" Copyright January 1998 by MPRG and Virginia Tech 2. PCS' 97 Track 7: Engineering & Systems Management by Ted Rappaport and James & Tucker 3. Propagator Volume 8 No. 3 Summer 1997 4. SMT Plus 1.0 User's Manual by Roger Skidmore and Tea Rappaport, Copyright August 1996 by Virginal Tech Software by Andrew titled "RF Planner" dated 6-17-97 1 2. A user guide titled Andrew Microwave System Planner" dated 7-99 Luser guide titled "Andrew Antenna System Panner" dated 6-99 Not Considered as hardcopy is not submitted and/or absent in the file wrapper EXAMINER DATE CONSIDERED EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and

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## INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) T. Rappaport, et al. Filing Date Concurrently Application Number Application Number Oz 560035BB Application Number T. Rappaport, et al. Group Art Unit not assigned

#### U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
AS	•	US-5,761,674	06-1998	Ito, Kenji	707/104.1
1		US-6,509,906	01-2003	Awe et al.	345/619
·		US-6,236,409	05-2001	Hartman, Linda Marie	345/629
	, i	US-4,964,060	10-1990	Hartsog, Charles H.	703/1
	• • •	US-5,689,705	11-1997	Fino et al.	707/201
$\Psi$	•	US-5,949,988	09-1999	Feisullin et al.	703/2
, <b>V</b>		US-5,907,494	05-1999	Dangelo et al.	703/1
AS.		US-6,272,447	08-2001	Gavin et al.	703/1
		US-			
		US-			
		US-			
		US-			<del></del>
		US-			
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#### FOREIGN PATENT DOCUMENTS

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Tran	slation
	DOCONIENT NONIBER		COUNTRY	CLASS	SOBCLASS	YES	NO
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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(Use several sheets if necessary)

Docket Num	ber (Optional)		Application Number
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Applicant(s) T. Rapp	aport, et al.		
Filing Date	concurrently		Group Art Unit

#### U.S. PATENT DOCUMENTS

*		Document Number Country Code Number-Kind Code	Date MM-YYYY	Name	Classification
AS	Α	US-5,625,827	04-1997	Krause et al.	345/964
	В	US-5,485,568	01-1996	Venable et al.	345/589
	C	US-5,907,850	05-1999	Krause et al.	345/854
ŀ	D	US-5,493,679	02-1996	Virgil et al.	706/919
	Ε	US-5,867,112	02-1999	Kost, James F.	341/51
	F	US-4,885,694	12-1989	Pray et al.	345/636
	G	US-5,861,887	01-1999	Butler et al.	345/428
	Н	US-5,467,441	11-1995	Stone et al.	345/619
	1	US-5,755,072	05-1998	Lingafelter, Kenneth	52/741.1
П	J	US-5,491,644	02-1996	Pickering et al.	709/226
M	ĸ.	US-5,994,984	11-1999	Stancil et al.	333/248
A	; L	US-6,243,772	06-2001	Ghori et al.	710/68
	М	US-	1		

#### FOREIGN PATENT DOCUMENTS

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER /Akash Saxena/ (12/26/2006)

DATE CONSIDERED

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